

**REMARKS**

In the Office Action mailed on April 7, 2011, claims 1-3, 5-10, 12, 14-21, and 25-33 stand rejected.

**Claim Amendments**

With this Amendment, independent claims 1, 27, and 31 have been amended to recite that the preblend includes cobalt, or a complex or salt thereof. Accordingly, the term “oxygen scavenging material” has been removed from these claims. Dependant claims 14 and 15 have been cancelled and dependant claims 16, 21, 28, 29, 32, and 33 have been amended to include language consistent with amended claims 1, 27, and 31.

In addition, independent claim 31 has been amended to recite that the polyamide material comprises a polymer containing m-xylylenediamine monomer units, p-xylylenediamine monomer units, or a mixture thereof.

**Claim Objections**

Claim 25 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

It is respectfully submitted that claim 25 is a proper dependant claim that further limits the subject matter of claim 1. Claim 1 recites a method for forming a plastic container, wherein the plastic container that results from the method has an oxygen scavenging property that is activated after filling the container with an aqueous fluid, wherein the activation results from filling. Claim 1 does not require the actual step of filling the plastic container with aqueous fluid to induce activation. Rather the “wherein” clause (i.e., clause “f”) refers to a property possessed by the plastic container resulting from the method. Dependant claim 25 recites the additional method step of filling the plastic container resulting from the method of claim 1 with aqueous fluid.

**35 U.S.C. 103(a) Rejections**

Claims 1-3, 5-10, 12, 16-21, and 25-33 stand rejected as being obvious over Venkateshwaran (US 5,744,056) in view of Collette (US 5,759,653). Although Venkateshwaran discloses neither: (i) the inclusion of an oxygen-scavenging polymer, let alone an oxygen-scavenging polyamide material such as that recited in the instant claims or (ii) the use of a cobalt catalyst (or any other catalyst) in combination with an oxygen-scavenging polymer, the Office Action asserts that the instantly claimed invention would have been prima facie obvious in view of Venkateshwaran and Collette.

While Venkateshwaran teaches an oxygen-scavenging composition, the ingredients and the oxygen-scavenging mechanism of the Venkateshwaran composition are completely different from that of either Collette or the instantly claimed invention. Venkateshwaran teaches an oxygen-scavenging composition that includes an oxidizable metal component (preferably iron) in combination with an electrolyte component (preferably sodium chloride) and a solid, non-electrolytic component (preferably sodium acid pyrophosphate).<sup>1</sup> The iron, or “oxidizable metal component,” in the Venkateshwaran composition reacts with oxygen and absorbs or “scavenges” oxygen, with the electrolyte and acidifying components promoting the scavenging reaction.<sup>2</sup> Thus, the Venkateshwaran composition employs a chemistry to scavenge oxygen that is similar to that which causes rusting of automobile bodies (i.e., metal, road salt, moisture, and oxygen). Whereas Collette uses a metal catalyst to promote the scavenging of oxygen by a polymer, the iron or other oxidizable metal component of Venkateshwaran is not used as a catalyst, but rather is the actual material that reacts with and scavenges the oxygen. Thus, in order to achieve a composition having a meaningful oxygen-scavenging capacity, the Venkateshwaran composition includes large amounts of the oxidizable metal component. For example, the polyethylene-based oxygen-scavenging concentrate of Example 2 of Venkateshwaran includes 20% by weight of iron as the oxidizable metal component, which corresponds to over 200,000 parts per million

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<sup>1</sup> See, e.g., Venkateshwaran at col. 3, lines 31-34.

<sup>2</sup> See, e.g., Venkateshwaran at col. 4, lines 55-60.

(“ppm”) of iron!<sup>3</sup> (In contrast, as recited in the instant claim 1, the preblend includes from 20 to 2,000 parts per million by weight of cobalt or a complex or salt thereof.)

Nonetheless, the Office Action asserts that a skilled artisan would have been motivated to do all of the following:

1. incorporate the metal-catalyzed oxygen-scavenging polyamide polymer of the Collette composition into the Venkateshwaran composition;
2. incorporate a cobalt catalyst of Collette into the Venkateshwaran composition; and
3. optimize all of the ingredient concentrations of the resulting combination to that recited in the instant claims.

Applicants respectfully traverse the rejection for at least the reasons that follow.

First, Venkateshwaran does not disclose the use of any oxygen-scavenging polymer in its oxygen-scavenging composition, let alone an oxygen-scavenging polyamide polymer containing m-xylylenediamine monomer units, p-xylylenediamine monomer units, or a mixture thereof.

Again, Venkateshwaran includes large amounts of oxidizable metals such as iron to react with and scavenge oxygen. The only polyamides disclosed in Venkateshwaran are nylon 6, nylon 66, and nylon 612, which are not known to scavenge oxygen and, moreover, are disclosed amongst a long laundry list of possible thermoplastic resins. Notably, Venkateshwaran does not disclose a single embodiment of a preblend that includes any polyamide polymer, let alone a blend of a polyester resin and a polyamide polymer. It is respectfully submitted that the Office Action exercises impermissible hindsight bias in (i) picking and choosing amongst the laundry list of thermoplastic polymers in Venkateshwaran to construct a preblend containing both a polyester and a polyamide and then (ii) further looking to Collette for a specific type of oxygen-scavenging polyamide polymer to use in place of the non-oxygen scavenging Venktashwaran polyamides.

Second, the amended claims recite that the preblend includes cobalt or a complex or salt thereof, which for sake of brevity is referred to hereinafter as “cobalt.” As acknowledged by the

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<sup>3</sup> . The Example 2 concentrate is prepared using a 4:3:2:1 weight ratio of iron:sodium chloride:betonite clay:anhydrous sodium acid pyrophosphate mixed in 50:50 weight ratio with polyethylene granules. Pursuant to these ingredient amounts, the oxygen-scavenging concentrate of Example 2 includes 20% by weight of iron, which corresponds to over 200,000 ppm of iron.

Office Action, nowhere does Venkateshwaran disclose the use of cobalt, let alone as a catalyst for an oxygen-scavenging polymer. Nonetheless, the Office Action asserts at pages 4 and 5 (in the context of dependant claim 16 which recites the use of a preblend that includes about 50 to about 1500 ppm by weight of a salt or a complex of cobalt) that it would have been *prima facie* obvious under MPEP 2144.07 to one of ordinary skill in the art at the time the invention was made to use a cobalt catalyst of Collette in package-manufacturing methods such as Venkateshwaran's. Contrary to the assertions of the Office Action, there is no art recognized suitability for use of the Collette catalyst in the Venkateshwaran composition in place of the oxidizable metal component. Whereas Venkateshwaran employs its oxidizable metal component (preferably iron) as the material that scavenges oxygen in its blend, Collette employs its metal catalysts for the completely different purpose of promoting the scavenging of oxygen by a polymer. It is entirely speculative whether the Collette catalysts, and the Collette cobalt catalysts in particular, could be successfully used in the Venkateshwaran composition as the oxidizable metal component.

Moreover, it is respectfully submitted that the proposed use of a Collette cobalt catalyst in the Venkateshwaran composition is improper in view of MPEP 2143.01(VI), which specifically states that "[i]f the proposed modifications or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the reference are not sufficient to render the claims *prima facie* obvious." Again, the Collette metal catalysts function as catalysts for promoting the scavenging of oxygen by an oxygen-scavenging polymer. In contrast, the Venkateshwaran oxidizable metal component does not function as a catalyst for the scavenging of oxygen by another material, but rather is the actual material that reacts with and scavenges oxygen. Therefore, the proposed modification of Venkateshwaran in view of Collette would change the principle of operation of the Venkateshwaran oxygen-scavenging composition.

Moreover, even *arguendo* if a skilled artisan were to somehow be motivated to pick a cobalt catalyst from Collette and look to use it in the Venkateshwaran composition as the oxidizable metal component, they would have no reason to include it in the preblend in an amount of 20 to 2,000 ppm, by weight, as recited in independent claim 1. Nowhere does

Venkateshwaran disclose a preblend including such a small amount of the oxidizable metal component. Rather, because Venkateshwaran includes the oxidizable metal component as the material responsible for reacting with and scavenging oxygen, Venkateshwaran teaches including a vastly higher amount. For example, as discussed above, Example 2 of Venkateshwaran discloses a polyethylene-based concentrate that includes over 200,000 ppm of iron as the oxidizable metal component. Contrary to the assertions of the Office Action, a skilled artisan considering Venkateshwaran would have no reason to “optimize” down the amount of oxidizable metal component in the Venkateshwaran concentrate by over 100-fold to the recited range of 20 to 2,000 ppm in claim 1. Such a drastic reduction in the amount of oxidative metal component would be expected to result in an oxygen-scavenging composition having virtually no capacity to scavenge oxygen and, as such, would run completely counter to the core teachings of Venkateshwaran.

### **CONCLUSION**

In view of the foregoing, all of pending claims 1-3, 5-10, 12, 16-21, and 25-33 are in condition for allowance. Reconsideration and prompt allowance of all pending claims is respectfully requested. The Commissioner is authorized to charge any additional fees associated with this paper or credit any overpayment to Deposit Account No. 50-2070.

Respectfully submitted,

VALSPAR SOURCING, INC.

Electronically filed:  
July 7, 2011

By: /Andrew A. DeMaster/  
Andrew A. DeMaster, Reg. No. 57326  
PO Box 1461  
Minneapolis, MN 55440-1461  
Telephone: (612) 851-7281  
Fax: (612) 486-7979